**IN THE UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF TEXAS
HOUSTON DIVISION**

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| UV PARTNERS, INC., | § | |
| | § | |
| Plaintiff, | § | |
| | § | CIVIL ACTION NO. H-20-4120 |
| v. | § | |
| | § | |
| PROXIMITY SYSTEMS, INC., | § | |
| | § | |
| Defendant. | § | |

**MEMORANDUM OPINION ON CLAIM CONSTRUCTION**

UV Partners sued Proximity for allegedly infringing two of its patents, U.S. Patent Nos. Nos. 9,901,652 and 10,413,624, and this court construed 37 disputed terms in those patents. (Docket Entry. No. 66). UV Partners first identified a third allegedly infringed patent, U.S. Patent No. 11,219,699, in its second amended complaint. (Docket Entry No. 43 at ¶ 29). In July 2022, Proximity asked the court to construe an additional term in the '699 Patent. (Docket Entry No. 68). With the benefit of the parties' briefing (Docket Entry Nos. 69, 70), the court now construes the remaining disputed term.

I.      **Factual Background[1]**

The '699 Patent is for a "Standalone Portable UV Lamp," a lamp housing a UV light source designed to disinfect human interface devices, such as keyboards, mice, or tablet computers. The disputed term, "[a] plurality of iterative UV disinfection cycles,"[2] appears in Claims 1 and 13 of the patent. Each claim is addressed to the invention's capacity to house a processor capable of turning the lamp light on and off automatically. The claims are as follows:

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[1]  A more detailed discussion of the background facts is in the court's previous claim-construction memorandum and is not repeated here. (Docket Entry No. 66).

[2]  It is not clear whether the term includes the article, "a." (*Compare* Docket Entry No. 69 at 1 (omitting "a") *with id.* at 3 (including "a" as part of the disputed term)). The parties do not treat the presence or absence of the article as a factor in claim construction. The court takes the same approach.

1. A standalone portable UV lamp for use in disinfecting a human interface device disposed on a surface, the standalone portable UV lamp comprising: . . . a processor configured to: automatically enable and disable the UV light source to provide a **plurality of iterative UV disinfection cycles**[.]

13. A standalone portable UV desk lamp for use in disinfecting a human interface device disposed on a desk surface, the standalone portable UV desk lamp comprising: . . . a processor configured to automatically enable and disable the UV light source to provide a **plurality of iterative UV disinfection cycles**[.]

Proximity contends that "a plurality of iterative UV disinfection cycles" is indefinite, making the associated claims invalid. (Docket Entry No. 69 at 1). UV Partners responds that the term is definite and that no construction is necessary. (Docket Entry No. 70 at 1). UV Partners argues that if the court does construe the term, that construction should follow what persons of ordinary skill in the art would understand the term to mean: "an automatically repeating series of UV disinfection cycles in which the UV light source is turned ON for a first time interval and then turned OFF for a second time interval." (*Id.*).

Proximity contends—and UV Partners does not dispute—that the term does not appear in the prosecution history of the '699 Patent or related patents, or in the '699 Patent specification. (Docket Entry No. 69 at 5). In response, UV Partners does not argue that the term itself appears in the specification, but rather points to figures and language in the specification that UV Partners contends convey its meaning. (Docket Entry No. 70 at 2–5).

## II.    The Legal Standard

The court's earlier claim construction opinion set out the legal standards that apply. Given Proximity's focus on invalidity, that standard bears repeating. Claims must be definite. *Oakley, Inc. v. Sunglass Hut Int'l*, 316 F.3d 1331, 1340 (Fed. Cir. 2003). The statute requires a patent to "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention." 35 U.S.C. § 112(b).

Section 112(b) requires that "a patent's claims, viewed in light of the specification and prosecution history, inform those skilled in the art about the scope of the invention with reasonable certainty." *Nautilus, Inc. v. Biosig Instruments, Inc.*, 572 U.S. 898, 910 (2014).  "A lack of definiteness renders the claims invalid." *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1363 (Fed. Cir. 2018) (citing *Nautilus*, 572 U.S. at 902).

Because an issued patent comes with a statutory presumption of validity under 35 U.S.C. § 282, "an alleged infringer who raises invalidity as an affirmative defense has the ultimate burden of persuasion to prove invalidity by clear and convincing evidence, as well as the initial burden of going forward with evidence to support its invalidity allegation." *Titan Tire Corp. v. Case New Holland, Inc.*, 566 F.3d 1372, 1376 (Fed. Cir. 2009) (citing *Tech. Licensing Corp. v. Videotek, Inc.*, 545 F.3d 1316, 1327 (Fed. Cir. 2008)).

## III.    Analysis

Proximity argues that the term "a plurality of iterative UV disinfection cycles" lacks a plain meaning.  (Docket Entry No. 69 at 5).  In response to UV Partners's argument that the term does not need construction, Proximity asserts that UV Partners must be arguing that "the phrase simply means multiple disinfection cycles of any kind, and the term 'iterative' means more than one." (*Id*.).  According to Proximity,

> [t]hat would mean that the patentee repeated itself three times in the space of six words.  A "plurality" means more than one.  The word "cycle" means a series of events that are repeated.  The term "cycles" is plural in the claim element, so there is yet another indication that the claim element is referencing more than one disinfection cycle.  "Iterative" modifies cycles, which is already plural.

(*Id.*).  Proximity offers several definitions for "iterative," each suggesting that the word does not mean "more than one," but rather a solution-oriented or progressive kind of repetition. "For 'iterative' to have meaning in the claim element, 'iterative' would have to mean that there is a

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training process, or sequence of learning, from one cycle to the next cycle such that the parameters

for successive disinfecting are refined or improved." (*Id.* at 6).

UV Partners disputes that "iterative" is this narrow and argues that the disputed term has a

plain meaning that is clear in the specification.   UV Partners points to a flowchart from the
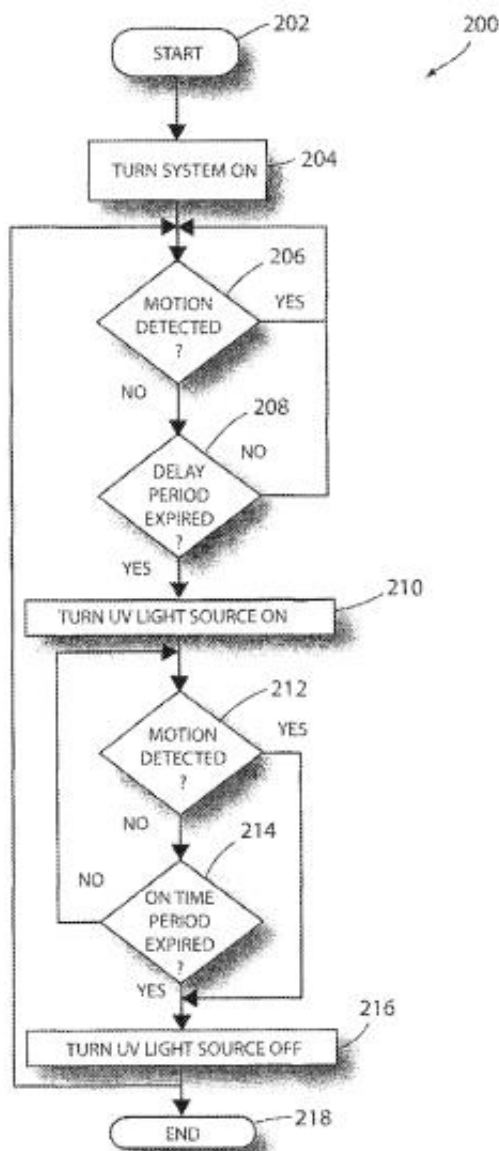
specification of the '699 Patent:



FIG. 25

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'699 Patent at 13.  A "disinfection cycle," according to UV Partners, consists of the disinfecting

UV lamp turning on and then off, or steps 210 through 216.  (Docket Entry No. 70 at 2).  After the

light is turned off, and provided the system is not switched off and power remains supplied, the

process returns to step 206, to determine if motion—such as a human hand intruding into the area

to be disinfected—is detected.  If no motion is detected, the light will again switch on after the

expiration of the delay period labeled as step 208.  (*Id.*).

UV Partners states that, in context, "iterative" describes the automatic repetition of the UV

disinfection process.  (Docket Entry No. 70 at 6).  UV Partners provides a dictionary definition for

the nominal correspondent of "iterative," "iteration," or "the repetition of a process or utterance."

(*Id.* at 4).  UV Partners's expert, John Ashley, offers an additional definition of "iterative" in his

report: "relating to or involving iteration, esp. of a mathematical or computational process[.]"

(Docket Entry No. 70-2 at 4).  These definitions resemble Proximity's, in the sense that all describe

a process that is repeated, but they lack the progressive refinement or improvement connotation of

Proximity's definitions.  While the word "plurality" appears in the term identified by Proximity,

the parties do not contest the meaning of that word, both taking it to mean "more than one."  (*See*

Docket Entry No. 70 at 5–6; Docket Entry No. 69 at 5).

The court agrees with UV Partners that the term, "a plurality of iterative UV disinfection

cycles," may be construed by reference to the specification.  Proximity's argument that the term is

indefinite, in part because it does not appear in the specification, is not persuasive.  A patent's

specification need not contain or define all terms used in its claims.  *See Blue Calypso, LLC v.*

*Groupon, Inc.*, 815 F.3d 1331, 1345 (Fed. Cir. 2016).  A patentee may define claim terms in the

specification by implication as well as explicitly.  *See Phillips v. AWH Corp.*, 415 F.3d 1303, 1321

(Fed. Cir. 2005) (the specification "acts as a dictionary when it expressly defines terms used in the

claims *or when it defines terms by implication*") (emphasis added) (quoting *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996); *Irdeto Access, Inc. v. Echostar Satellite Corp.*, 383 F.3d 1295, 1300 (Fed. Cir. 2004) ("Even when guidance is not provided in explicit definitional format, the specification may define claim terms by implication such that the meaning may be found in or ascertained by a reading of the patent documents.") (citations omitted); *see also Trustees of Columbia Univ. in the City of New York v. Symantec Corp.*, 811 F.3d 1359, 1364 (Fed. Cir. 2016) (collecting cases).

Read in the context of the specification, the words that Proximity argues are merely repetitions of what was said earlier have independent meanings. "UV disinfection cycles" refers to the lamp turning on, beginning its disinfecting work, and then turning off, much like the term "wash cycles" describes the operation of a washing machine. "Iterative," which modifies "UV disinfection cycles," may be understood to mean, as UV Partners argues, the automatic repetition of those cycles. After the light is switched off, concluding one disinfection cycle, there is a "delay period," followed by the light switching back on, beginning the cycle anew. While "iterative" may, under certain definitions, imply progress or improvement accompanying or achieved by repeated cycles, the specification here does not include that connotation. The definition implied in the specification does not create unacceptable ambiguity because the term "iterative" does not appear in the '699 Patent apart from its use in the disputed phrase. There is no need to resort to dictionaries when the specification gives a meaning to the term that would be understood by a person of ordinary skill in the art. "Plurality," meaning "more than one," refers to the multiple times that the automatically repeating cycle may occur if it is interrupted at some point by detected motion.

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UV Partners's proposed construction is "an automatically repeating series of UV disinfection cycles in which the UV light source is turned ON for a first time interval and then turned OFF for a second time interval." (Docket Entry No. 70 at 1). The court believes this construction should be modified to account for the parties' mutual understanding of "plurality," and therefore proposes the following modification: "an automatically repeating series of UV disinfection cycles in which the UV light source is turned ON for a first time interval and then turned OFF for a second time interval *in a cycle that may occur more than once*." This construction provides for the interruption of the automatically repeating UV disinfection cycles by the detection of motion, followed by the resumption of the cycles when motion is no longer detected.

## IV.     Conclusion

"A plurality of iterative UV disinfection cycles" is construed to mean "an automatically repeating series of UV disinfection cycles in which the UV light source is turned ON for a first time interval and then turned OFF for a second time interval in a cycle that may occur more than once."

SIGNED on August 24, 2022, at Houston, Texas.

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Lee H. Rosenthal
Chief United States District Judge

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